

ABSTRACT OF THE DISCLOSURE

A vapor-compression refrigerant cycle includes a variable displacement compressor for compressing refrigerant, a control unit for controlling the displacement of the compressor. The control unit includes a lock determining means for determining a lock of a sliding portion of the compressor, and the lock determining means determines that the sliding portion of the compressor is locked, when a control signal where the displacement of the compressor is equal to or larger than a predetermined value is output from the control unit, and when an absolute value of a temperature difference between an air temperature before being heat-exchanged in a low-pressure heat exchanger of the vapor-compression refrigerant cycle and the air temperature after being heat-exchanged in the low-pressure heat exchanger is equal to or smaller than a predetermined temperature. Therefore, the lock of the compressor can be accurately detected.